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...Y OF HEALTH SCIENCES, McMASTER UNIVERSITY
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URBAN M...
GOVERNMENT DOCUMENTS

# Health sciences' investigators show presence of suspect agent in human cancer cell formation

McMaster scientists studying why human cells grow old and die, and why cancer cells grow unchecked, recently published further evidence that a specific enzyme called telomerase is present in proliferating human cancer cells, but not in normal ones.

This new research is the first demonstration of telomerase activity in any human tissue.

The authors of the McMaster study, published in the April 12th issue of the *Proceedings of the National Academy of Sciences*, say the new findings support further investigation to develop telomerase–inhibiting agents which could be used as precisely targeted anti-tumor drugs to attack diseased cells directly without the harm to healthy tissue that sometimes results from therapies such as surgery, radiation or chemotherapy.

They emphasized that, though they are optimistic, their findings are preliminary and further studies will be needed before tests of any new drugs are done with humans.

The multi–disciplinary research team comprises co-directors Drs. Silvia Bacchetti, a molecular biologist whose specialty is cancer, aging specialist and biochemist Calvin Harley, and collaborators Dr. Hal Hirte, an oncologist, and PhD student Chris Counter.

Dr. Bacchetti describes the new findings as exciting and says their significance would be in the eventual development of a unique agent to treat cancer.

The team's PNAS paper, building on previous work noting the important roles of telomeres and telomerase in normal and cancerous cell lines, reports the presence of telomerase activity in malignant cells taken from 151 women with ovarian cancer, but not in normal cells taken from either cancer patients or healthy people.

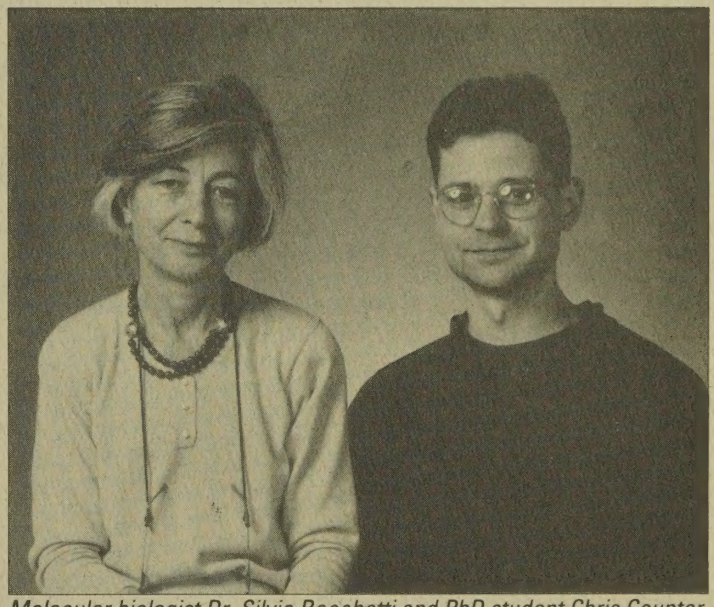
The researchers have reported that normal human cells can reproduce only a limited number of times, referred to as cell senescence, while cancer cell division can occur endlessly.

Every human cell contains 23 chromosomes made up of DNA—commonly called the biochemical blueprint of life. The ends of the chromosomes—called telomeres—are very short pieces of DNA that are repeated more than 1,000 times.

Whenever a normal cell divides, a segment of the telomere is clipped off until it eventually becomes too short and the cell line dies–a contributing factor to human aging and death.

The scientists liken the telomeres to the plastic tips on the end of shoelaces that keep them from fraying.

However, the researchers have reported, cancer cell lines appear to replicate endlessly by producing the enzyme telomerase which they think repairs the frayed telomere ends by replacing clipped off pieces and allowing the cancer cell line to continue replicating.



*Molecular biologist Dr. Silvia Bacchetti and PhD student Chris Counter.*

If a drug could be developed to block telomerase, it would inhibit the cancer cell line from wildly reproducing without effecting normal cells. Theoretically, once the cancer cell line replication is inhibited by blocking the telomerase enzyme, cancer tumor growth would slow and perhaps shrink.

Harley, on leave from McMaster's faculty of health sciences and working with biotechnology firm Geron Corp. in Menlo Park, California, says investigators there now are actively pursuing a telomerase enzyme-blocking drug.

Tests of potential anti–telomerase agents are to begin in animal models soon, but human trials are probably three to four years away, with wide–spread use of any developed treatment agents being "some years away," Harley said.

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## TRICENNIAL CELEBRATION: SPRING 1994 UPDATE

***Reproductive Biology Workshop:***
May 6 — McMaster University Health Sciences Centre. Contact Dr. E.V. YoungLai, department of obstetrics and gynecology, HSC–3N52, (905) 525-9140, ext. 22228.

***Future Trends in General Internal Medicine in Ontario:***
May 6 — McMaster University Health Sciences Centre. Topics include: the joys and frustrations of general internal medicine; how do practice guidelines help in clinical practice; how can evidence–based medicine be incorporated at the bedside; and many others. For information contact Dr. Akbar Panju (905) 575-5444.

***A Public Forum — To Diet or Not to Diet: What Every Body Knows and Nobody Wants to Believe***
May 12 — Hamilton Public Library, Room A, 7:30–8:30 p.m. Tickets $2, seating is limited. Call (905) 525-9140, ext. 22407 or at the door. Speaker: Dr. Donna Ciliska, PhD.

**Educational & International *conferences on Communication, Aging and Health***
May 11–12 — Hamilton *and* May 13–15 — Hamilton Sheraton. For details on the two conferences contact Ms. Linda Boich, (905) 525-9140, ext. 24858

***Health economics and policy analysis:***
May 19-20 - The Centre for Health Economics and Policy Analysis presents its 7th Annual Health Policy Conference, *Rethinking Primary Care*. The Nottawasaga Inn, Alliston, Ontario. Contact Ms. Lynda Marsh, (905) 525-9140, ext. 22135 for information.

***Improving the Life Quality of Children: Options & Evidence***
May 31–June 2 — The inaugural symposium of the joint McMaster University–Chedoke–McMaster Hospitals' Centre for Studies of Children at Risk.
Contact Ms. Peggy McAlpine (905) 521-2100 ext. 7358.

***Turning Research into clinical practice: Investing in Community partnerships***
Keynote speaker: Stephen Lewis
June 2 – 3 — Hamilton Sheraton Hotel.Presented by McMaster's three health system–linked reseach units. Contact Ms. Mary Pfohl, (905) 521-2100, ext. 4067.

***Physical therapy educators:***
June 3 — McMaster Health Sciences Centre, Hamilton. Contact Ms. Helen Saarinen, (905) 525-9140, ext. 24106.

***Psychiatric care in family medicine: Clinical and educational challenges***
June 9 – 11 — Pillar & Post, Niagara–on–the Lake. Contact Dr. Allyn Walsh, (905) 575-1300.

***Curriculum innovation: problem–based learning in health sciences education***
June 20 – 24 — McMaster University Health Sciences Centre. Precedes the 6th Ottawa conference on PBL (June 29–July 1). Contact Ms. Annette Sciarra, (905) 525-9140, ext. 22714.

***Social event note:*** The Tricennial open house and arts & crafts show has been rescheduled to Sept. 30 – Oct. 2. Contact Ms. Joanne Taylor, (905) 525-9140, ext. 24323 for information.

## *New graduate program allows nurses to pursue advanced degrees closer to home*

A new nursing education program at McMaster University will now make it easier for nurses to earn higher university degrees in their profession without having to travel to distant locations and without having to transfer to different disciplines.

The school of nursing in McMaster's faculty of health sciences will start offering MSc and PhD degrees as part of its new Clinical Health Sciences (Nursing) program.

The MSc and PhD programs, to be offered both full–time and part–time, will help increase the number of nurses in Canada with graduate level training.

Of the approximately 300 Canadian nurses now holding PhDs, fewer than 25 per cent hold nursing PhDs.

Until recently, many nurses have had to pursue their doctoral studies in disciplines other than nursing. Most of the faculty members in McMaster's school of nursing, for example, hold their PhDs in non–nursing disciplines such as sociology, adult education, or psychology.

The PhD nursing degree is only available now in Canada at the universities of Alberta, British Columbia, McGill, Montreal and Toronto—and these programs have only been started in the last eight years.

"About 17 McMaster school of nursing faculty are presently registered as PhD candidates, many in U.S. universities in Buffalo, Detroit, and Ann Arbour, Michigan," said Dr. Andrea Baumann, associate dean health sciences (nursing).

"We are very happy to now be able to offer these new graduate nursing degrees at McMaster."

The new degree programs will start at McMaster in the fall of 1994 when a limited number of candidates will be accepted for entrance.

Enquiries should be made to the faculty of health sciences' Graduate Programs Office.

### Janssen supports motility lab research

*Dr. Alain Raoult, left, director of scientific affairs, Janssen Pharmaceutica Inc., presents motility lab director Dr. Gervais Tougas, center, and Dr. Steve Collins, intestinal diseases research program director, with a cheque for $50,000 U.S. toward the purchase of equipment to support treatment and research of gastrointestinal motility disorders.*

*$300,000 grant supports development of gene therapy*

# London Life Insurance makes breast cancer research award to professor Jack Gauldie and collaborators

The London Life Insurance Company recently awarded its major medical research grant to a prominent researcher in the faculty of health sciences at McMaster University.

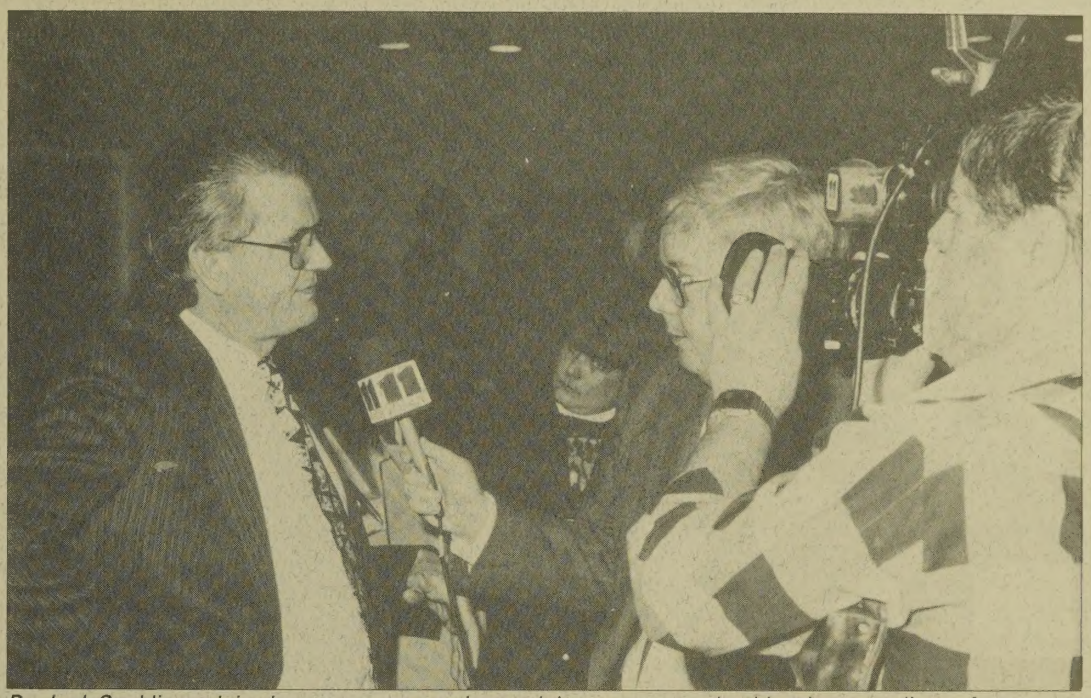
The $300,000, three–year award was presented by Mr. Gordon Cunningham, president of London Life, to Dr. Jack Gauldie, professor and chair of pathology.

Working with McMaster co–investigators Drs. Frank Graham and William Muller, Gauldie is researching the use of gene therapy in developing breast cancer vaccines to control and potentially eliminate the metastatic, or spreading phase, of breast cancer.

At a media conference, Gauldie explained that the research he will be doing with Graham and Muller is to transform cells from breast cancer tumors into vaccines in an attempt to stimulate the body's immune system and prevent the spreading phase of breast cancer. This approach will not prevent breast cancer, rather it would provide a way to slow or halt its progress upon diagnosis, Gauldie said.

This approach is similar to the experimental treatment with interleukin–2 that former Quebec premier Robert Bourassa received for melanoma in the United State .

The research could have significant implications Gauldie explained in accepting the award. "With one out of every 10 women in the Western world developing breast cancer, the disease is the single most common female malignancy. It is also the leading cause of death in non–smoking women and results in about 5,000 deaths in Canada each year."



*Dr. Jack Gauldie explains breast cancer vaccine model to reporters at health scienes media conference.*

Human clinical trials of the new gene therapy are still two to three years away, but the McMaster team has a head start, Gauldie said.

In making the announcement Mr. Cunningham said: "As a life insurance company, we take a particular interest in the health and well being of Canadians and so we place a priority on funding health care and medical projects. The London Life Award in Medical Research is the most significant annual grant made by our company."

"I am extremely honored. London Life should be commended for its Medical Research Award program and for choosing to support this basic science research toward a useful model for breast cancer therapy," Gauldie said. He is the second recipient of the London Life Award which began in 1992.

London Life is the leading insurer of individual Canadians with 1.4 million customers. The company markets its products through 194 offices coast–to–coast and its 3,000 sales representatives make up the largest professionally–trained sales force in the life insurance industry.

## Problem–based learning pioneer honored

*A plaque honoring the late Dr. William Spaulding, a founder of the faculty of health sciences, is unveiled above by Drs. Bill Walsh, left, C.B. Mueller, Moran Campbell, Mrs. Mary Spaulding, MD chair Jennifer Blake and history of medicine professor Charles Roland. The plaque is in the health sciences library history of medicine room where it marks Spaulding's contribution to medical history as a founder of problem–based learning. Mrs. Spaulding also presented a collection of more than 400 historical medical books bequeathed by her husband to the health sciences library.*

**Ms. LeeAnn Fenn,** director of the Child Life Studies diploma program, reports that for the second year the program has received financial support from the Eva Leflar Foundation, Hoover Canada, and the Plum Foundation. "Their generous support ensures the continuation of this....unique Canadian academic program for the next year," Fenn says.

Thanks go out from the **Tricennial Project Office** to all those who made the recent Evening of Musical and Culinary delights such a success. Dinner was provided by 35 Tricennial Cookbook contributors to about 180 people who also enjoyed jazz and choir music. Thanks also to Piccones of Dundas, Links Deli, Firan Foundation, Opera Hamilton, Te Deum, Hamilton Ballet Co., and the Bach Elgar Choir.

**Dr. John Bienenstock** has lead an external review of Australia's National Health and Medical Research Council (NHMRC). He was commissioned by Australian Senator and Labor Party Health Minister Graham Richardson and conducted the review with five Australian research scientists. His recommendations are currently under consideration by the government.

*Dr. J. Bienenstock*

Meanwhile, McMaster's Board of Governors recently reappointed Bienenstock to a second five–year term as dean and vice-president of the faculty of health sciences.

**Dr. Irwin Walker,** medicine, has been appointed chair of the Medical Scientific Advisory Committee to the Canadian Hemophilia Society.

**Dr. Norman Jones**, medicine, has been appointed editor–in–chief of the new Canadian Respiratory Journal. The first issue was published in mid–March. Jones came to McMaster in 1968 as coordinator of the regional respirology program, and was head of the Ambrose Cardiorespiratory Unit between 1972 and 1992.

The College of Family Physicians of Canada reports that **Dr. Brian Hutchison**, family medicine, has been awarded the Ortho Literary Award for his article *Critical Appraisal of Review Articles* published in the May 1993 issue of Canadian Family Physician.

Also, **Drs. Gina Ogilvie** and **Cathy Risdon**, second year FM residents based at the North Hamilton Community Health Centre, are joint recipients of the Murray Stalker Memorial Lecture Award given to outstanding FM residents in Canada. Part–time family medicine members **Drs. Stephen Buchman, James Faught, Don McLean, and Ralph Suke** have received fellowships.

**Dr. Ted Young** is the 1993–1994 president of The Society of Head and Neck Surgeons—the largest international group of head and neck oncologists. He is the first Canadian president in the organization's 40–year history. Young is a clinical professor of surgery and leads the head and neck service at St. Joseph's Hospital.

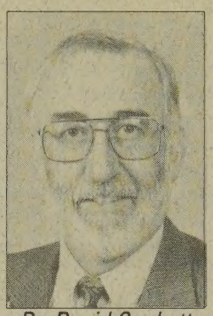
**Chedoke–McMaster Hospitals** reports that six of its 12 social contract days during fiscal year April 1, 1994 – March 31, 1995 are "designated" meaning that outpatient clinics and hospital departments which close on regular holidays will also be closed on the "designated" social contract days. **The six days are: Friday, May 20; Thursday, June 30; Tuesday, August 2; and Wednesday, Thursday, Friday, December 28, 29, 30, — all during 1994. The hospital apologizes for any inconvenience.**

**Dr. Peter Neelands**, chair, Northwestern Ontario medical program (NOMP), reports that a plaque has been dedicated in the Health Sciences North Resource Centre at Lakehead University in memory of **Mr. Peter Maurer** who died in 1991 at age 50. Maurer, former chief administrative officer of the faculty of health sciences and Northwestern Ontario health education program administrator for McMaster, was instrumental in developing three educational programs that continue to benefit Northwestern Ontario: NOMP, which trains medical students in the north; the Family Medicine North Residency Program, which prepares graduate doctors for practice in the North; and the Northern Studies Stream, which trains occupational therapy and physiotherapy students from McMaster.

**Dr. Donna Ciliska**, PhD, associate professor nursing, will present a public forum titled *To Diet or Not to Diet: What Every Body Knows and Nobody Wants to Believe* at the Hamilton Public Library, Room A, on Thursday, May 12th from 7:30 to 8:30 p.m. Ciliska's presentation is part of the school of nursing's contribution to the faculty of health sciences' ongoing 30th anniversary celebrations. Tickets are $2 and are available at (905) 525-9140 ext. 22407. Seating is limited.

*Dr. Donna Ciliska*

Clinical epidemiology and biostatistics chair **Dr. George Browman** says that after 26 years with the faculty of health sciences, **Dr. David Sackett**, professor and founding chair of CE&B, will take up a new post at Oxford University in England. CE&B will be organizing a farewell, Browman says, with details available from his office shortly.


*Dr. David Sackett*

## First International Activities annual report published

At the request of the Dean, the Centre for International Health in the faculty of health sciences has just published the first International Activities annual report.

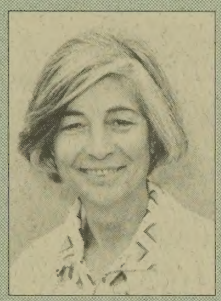
The report provides a summary and directory of Faculty activities in the international health and development field.

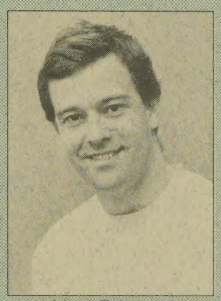
Health sciences projects and contact names are provided for the year 1993.

The report, edited and designed by Vic Neufeld, Helena Collins and April Jones, is available by contacting the CIH office at (905) 525-9140, ext.. 22033.

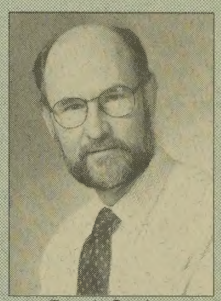
## FIVE-YEAR, $5 MILLION GRANT MADE

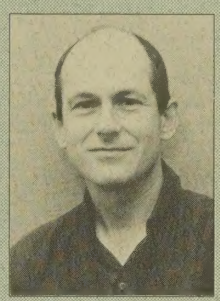
# *National Cancer Institute renews major program grant to McMaster Cancer Research Group*


*Silvia Bacchetti*


*Aled Edwards*

*Lori Frappier*


*Frank Graham*


*David Johnson*

*Jim Smiley*

The National Cancer Institute of Canada (NCI), the research funding arm of the Canadian Cancer Society, has awarded the faculty of health sciences' Cancer Research Group funding of approximately $5 million over the next five years.

The grant, called A Program in Viral Oncology, provides $854,387 yearly for studies of the role of DNA tumor viruses in cancer. The NCI funding renews a previous five–year award.

In addition, the new grant ensures that the NCI will continue providing Career Scientist Awards to five members of the Cancer Research Group, bringing the total level of support annually from NCI to more than $1 million.

"The award will support a highly interactive research program focusing on DNA tumor viruses," said Dr. James Smiley, Cancer Research Group coordinator at the faculty of health sciences.

The major reasons for undertaking this research, Smiley said, are that DNA viruses are significant causes of human cancer and understanding the mechanisms through which they induce tumors will allow development of promising new approaches to cancer prevention and treatment.

"These viruses provide exceptionally powerful probes for studying the cellular regulatory systems that are subverted during tumor formation—basic information gained from these studies is therefore directly relevant to all forms of human cancer," Smiley said.

"Our major goal is to determine how specific viral proteins influence and perturb the following processes: control of cell growth and mortality (see Network story on page 1), regulation of gene expression, control of DNA replication, maintenance of chromosome stability, host immune surveillance, intracellular protein sorting, and virus entry, cell–to–cell spread, and egress.

In addition, says Smiley, we will examine the potential of viruses as vectors (carriers) for gene transfer–based approaches to anti–tumor therapy (see Network story on page 3). Our experimental systems are drawn from several DNA tumor viruses (adenovirus, herpes simplex virus, SV40, and Epstein–Barr virus) selected to provide overlapping and complementary information."

The research program will provide novel information on the mechanisms of tumor induction by DNA viruses, and illuminate events that are common to many other modes of tumor formation, Smiley said.

The McMaster Cancer Research Group comprises about 50 researchers (technical staff, graduate students and postdoctoral fellows) working in the laboratories of Drs. Silvia Bacchetti, Aled Edwards, Lori Frappier, Frank Graham, David Johnson, and Jim Smiley.

The Group was established in 1974 by McMaster and the NCI to provide a focus for cancer research in the newly inaugurated faculty of health sciences.

The late Dr. William Rawls, a noted cancer epidemiologist, was recruited to McMaster from Baylor University Medical School in Houston, Texas, as the Cancer Group's founding coordinator. During the 1970s and 1980s Rawls and his successor, Dr. Phil Branton, built the Group into the largest center for research on cancer viruses in Canada.

During the last four years, the composition of the group has changed considerably, says Smiley.

Rawls died in 1990 and Branton moved to take the chair of biochemistry at McGill University. Smiley subsequently became coordinator, while Drs. Frappier and Edwards were recruited in 1991 and 1992 respectively.

**Continuing Health Sciences Education Short Course Programs**, of interest to all health professionals. Contact Rose Galano at 521-7966 for information or registration.

**May 4** - Dermatology, a.m., Geriatrics, p.m., Hamilton Sheraton Hotel.
**May 4** - Current Issues in Reproductive Endocrinology and Infertility, Hamilton Sheraton Hotel, 9:30 a.m. - 5:00 p.m.
**May 18** - S.T.D.'s, Hamilton Convention Centre.
**May 25** - Clinical Dilemmas, Part VIII, p.m., Holiday Inn, Burlington.
**June 1** - Office Urology, a.m., Orthopedics, p.m., Hamilton Convention Centre.
**June 8** - Cardiology, Hamilton Convention Centre.
**June 10-12** - 3rd Annual Primary Care Review, Queen's Landing Inn, Niagara-on-the-Lake.
**June 13-17** - Indepth Palliative Care, Holy Spirit Centre, Hamilton
**June 15** - Pediatric Emergencies, Hamilton Convention Centre
**June 15-17** - PALS, McMaster University, Health Sciences Centre.

**Continuing Health Sciences Education Nursing Short Course Programs**
Contact Janet McLeod, 521-2100, ext. 4914 for information. All courses are being held at the Ancaster Banquet Centre, 1365 Sandhill Drive.

**May 26** - Participative Management - Shared Governance.

**Continuing Health Sciences Education Academic Studies Programs** for the health professional. Contact Grace Burditt, (905) 521-2100, ext. 4900 for information.

**Apr. 22 - May 20** - Advances in Human Genetics, each Friday, 1:00 p.m. - 2:30 p.m. in HSC-4E20.

**May 10** - Clinical Chemistry/ Academic Studies, *Overview of Laboratory Diagnosis of Genetic Diseases*,, 1:00 p.m. - 5:00 p.m., HSC-1A3.

**May 11** - Introduction to Health Law, 1:00 - 2:30 p.m., Law and Psychiatry, 2:30 p.m. - 4:00 p.m., HSC-2J13.

**Program for Educational Development** Special Education Rounds of visiting Tricennial Professors. Contact Marg Waddell at ext. 22662 for information or copies of articles written by the speakers.
**May 18** - Dr. David Irby, PhD, University of Washington, 12:00 - 1:00 p.m., HSC-3E26. Dr. Irby is widely respected for his work in teacher training and faculty development

**May 19 - 20** - The Centre for Health Economics and Policy Analysis 7th Annual Health Policy Conference, *Rethinking Primary Care*, at the Nottawasaga Inn, Alliston, Ontario. Contact Lynda Marsh at (905) 525-9140, ext. 22135.

**May 26** - *Letter from Wingfield Farm*, a play in support of a scholarship in gerontological social work at McMaster, at Theatre Aquarius, 8:00 p.m. Tickets are available by calling (905) 522-7529 or 1-800-465-7529.

**11th Annual McMaster Summer Institute in Gerontology** is being held at McMaster University, June 6 - 17. For information, contact Anju Joshi, Office of Gerontological Studies, ext. 24449.

**June 6-7** - *Spirituality and Aging.*
**June 8** - *Recreation and the Older Adult.*
**June 9** - *Innovative Teaching Resources in Aging.*
**June 13-17** - *Client-driven Care: Assessment, Management and Outcomes.*

**June 28 - July 1** - The Tricennial McMaster Conference on Problem Based Learning, *Problem Based Learning in Health Sciences: the state of the art*. Contact Ingrid Ellis, Conference Office for information and registration, ext. 22182.

## First Annual W. Peter Cockshott Memorial Lecture

### *A Celebration of His Life*

**Thursday May 5, 1994**
Health Sciences Centre, Room 1A6

*Imaging of the Cranio-Cervical Junction*
Guest Speaker is Dr. Mini Pathria
Associate Professor, Radiology
University of California, San Diego

Welcome: 5:30 p.m.
Lecture: 6:00 p.m.
Dinner: 7:30 p.m.

Dinner cost is $30.00
Please RSVP to Elaine Hewitt, Department of Radiology, (905) 521-2100, ext. 5298.

## The Second Annual John Cleghorn Memorial Lecture

Guest Speaker: Patricia Goldman-Rakic, PhD,
Professor of Neuroscience
Yale University School of Medicine.

***Cortical Mechanisms in Schizophrenia***

**Thursday June 16, 1994**
11:30 a.m. - 1:00 p.m.
in
Health Sciences Centre, Room 1A1

This lecture is made possible through an educational grant from Janssen Research Foundation.

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McMaster University
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